

# SUPERCOTE<sup>®</sup>

## HVOF Spray System

### GENERAL INFORMATION

Hardface Alloys SUPERCOTE<sup>™</sup> HV<sup>3</sup> is a high-performance, cost-effective High-Velocity Oxy-Fuel Spray system designed to produce the densest carbide and metallic coatings, with high hardness and low oxide levels.

The system comes complete with the SUPERCOTE<sup>™</sup> HV<sup>3</sup> Control Console, Gun, Powder Feeder and a Cooling System. The entire system is integrated to provide reliable and reproducible results with simple operation.

The hydrogen pilot system is sequenced to burn both before and after the main flame to ensure a clean start and stop without fear of kerosen being spayed out and a transducer is used to measure the chamber pressure to avoid in accurate measurement.

In the SUPERCOTE<sup>™</sup> process, liquid fuel and oxygen are fed via a pre-mixing system, at a high pressure, into a combustion chamber where they burn to produce a hot high pressure gas stream. The hot gas is then expanded through a laval type nozzle increasing the gas velocity and the pressure. This gas stream heats and accelerates the powder particles so they impact with tremendous energy upon the substrate surface.

The SUPERCOTE<sup>™</sup> has been designed to give the most consistant and reliable spray on the market today. It is your perfect choice for all your HVOF spraying applications.



### FEATURES

- Hydrogen Pilot System
- Multiple Powder Ports
- Low Powder Injection Pressure
- Color-Coded Controls & Hoses
- Built-in Pump & Fuel Tank
- PLC Controlled Start-Up/Run Modes
- All Stainless Steel Heat Exchanger

### Model HV<sup>3</sup>



### BENEFITS

- Clean Start and Stop (Hydrogen Start-Up)
- Excellent Heat Transfer
- Accurate Pressure Measurement
- Precision and Reliability
- Simple To Operate & Maintain
- Low Operating Costs
- Uniform Powder Flow
- Wider Flame Front

## APPLICATIONS

- Aerospace Components
- Anti-Corrosion
- Ball Valves
- Boiler Tubes
- Digestors
- Hard Chrome Replacement  
Alternative Coating (HCAT)
- Hydroelectric Turbine Parts
- Industrial Rollers  
printing  
textiles  
paper/pulp making  
steel making  
embossing
- Petrochemical  
Impellers  
Diffusers  
Wear Rings  
Piston Rods  
Pump Systems

## SPECIFICATIONS

### Control Console:

Power Req. - 110 Vac Single Phase, 13 amps  
L x W x H - 20" x 23" x 40"  
Weight - 500 lbs.

### Gun:

Maximum Water Inlet Temp. -  
L x W x H - 19" x 5" x 5"  
Weight - 15 lbs.

### Powder Feeder:

L x W x H - 3.4' x 1.5' x 1.5'  
Weight - 249 lbs.

### Chiller:

Power Req. - 460 Vac 60 Hz 3 Phase  
32 amps@460 Vac  
Fluid Pump/GPM - 15@ 100 psi  
Capacity - 25 tons  
L x W x H - 92 1/4" x 38" x 75"  
Weight - 3000 lbs.

## COMPONENTS

### Control Console:

*Model HV<sup>2</sup>C* is the control console that brings together all of the elements of the system including cooling water, powder, gas, oxygen, and fuel flows with only quality components used to ensure trouble-free operation. It provides all the necessary controls and interlocks to ensure easy, consistent, and safe operation with all controls and hoses color-coded. The control console also contains a fuel pump and built-in fuel tank, an external fuel tank may also be used.

### Gun:

*Model HV<sup>2</sup>G* machine-mount gun, is a heavy duty, high performance gun for toolpost mounting in mechanized and automated spraying operations. It features an array of ports to feed the combustible mixture through giving a wider flame front and promoting complete burning within the chamber. The hydrogen pilot system is sequenced to burn both before and after the main flame to ensure a clean start and stop without fear of kerosene being sprayed out. Powder injection pressures are very low preventing burnt gases running along the powder tub. A transducer is used to measure the chamber pressure to avoid inaccurate measurement.

### Powder Feeder

*Model HV<sup>2</sup>P* powder feeder interconnects with the control console for single-point operation. It consists of a sealed canister and a variable speed screw assembly which are mounted on a special electromagnetic vibrator. The vibrator assures uniform flow of the powder from the canister to the screw. It uses a positive displacement feedscrew to accurately meter powder feed rate. This coupled with cyclonic gas mixer and the gun's low powder injection pressure, maximizes the consistency and precision of the spraying operation. Feed control is via an electronic control and digital display.

### Chiller:

*Model HA2500AC* chiller uses a large capacity (145 gal.) water storage tank to cool the process using an all copper heat exchanger (S.S. Tank) for efficient heat transfer. Non-corrosive, contaminate-free materials are used to guarantee long service life. The gun water temperature is maintained by a PLC controlled system. Desired *to-process* water temperature is selected via electronic remote control box which feature the power on-off switches.

## OPTIONAL ACCESSORIES

### Travel Case:

*Part 91250* is a heavy-duty, fully-cushioned portable traveling case. Designed for easy maneuverability to fit your complete SUPERCote™ system. Such portability makes it easy to carry out on site jobs with no loss of spray quality.

